

**ABSTRACT OF THE DISCLOSURE**

A multi-tune radio frequency (RF) coil for concurrent magnetic resonance imaging (MRI) and magnetic resonance spectroscopy (MRS) is disclosed. The multi-tune RF coil includes a first end ring having a generally annular opening and a first plurality of elongated segments coupled to and positioned circumferentially around the first end ring. The first plurality of elongated segments are azimuthally offset from one another by a substantially equal angular distance. A second RF coil includes a second end ring having a generally annular opening and a second plurality of elongated segments coupled to and positioned circumferentially around the second end ring. The second plurality of elongated segments are azimuthally offset from one another by a substantially equal angular distance. The first and second plurality of elongated segments are coupled to and positioned circumferentially around at least one of an a third end ring having a generally annular opening and an end cap, thereby forming a coil volume, and the first and second plurality of elongated segments lie in a same circumferential plane.

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